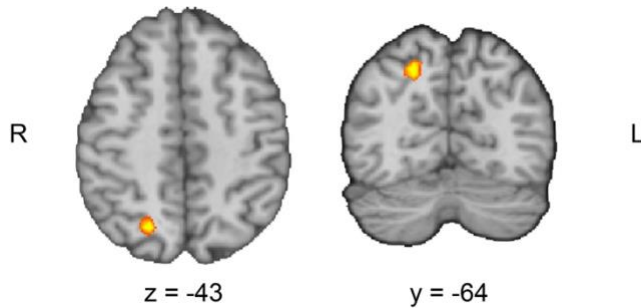


Supplementary Figures

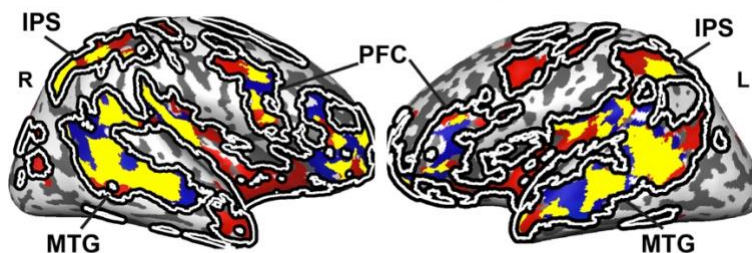
Supplementary Figure 1 shows the results of Levene's Test of Variance as reported in the main text.



Supplementary Figure 1. No regions showed a difference in mean neural maturity. There were also no regions where boys show more variance than girls. Neural maturity was more variable in girls than boys in one small cluster of right posterior parietal cortex. (TAL peak: 18, -64, 43; $F(1,102) \geq 6.89$, $p \leq 0.01$, cluster corrected to $p < 0.05$ with a threshold of 11 voxels). This region did not differ in mean activation between boys and girls. No other region showed a difference in variance.

Supplementary Figure 2 shows the results of correlations between neural maturity and math ability for girls and boys.

Mathematical Processing Networks



Predicting Neural Maturity from Math Ability:

$t(93) > 2.64$, $p < 0.01$, corrected

● Girls ● Boys ● Overlap between Girls & Boys

○ Correlation in all children (outlines): $r(95) > 0.26$

Supplementary Figure 2. Regions where math ability correlated with neural maturity in girls (red), boys (blue), and all children (outlines). The yellow regions show the overlap of the results for girls and boys and the same as those regions shown in Figure 2B in the main text. Non-overlapping regions did not show significant differences between girls and boys.

Supplementary Table

Supplementary Table 1 reports all statistics for the Region of Interest Analyses conducted on neural data from the number work as reported in the main text.

Supplementary Table 1. Statistics for Region of Interest (ROI) Analyses. Degrees of freedom are reported in parentheses for each test.

sd = standard deviation. LIPS/RIPS = left/right intraparietal sulcus, LIFG/RIFG = left/right inferior frontal gyrus, ACC = anterior cingulate cortex.

*indicates statistical significance ($p < 0.05$)

| Statistical Analyses | | | | | | | | | | | | |
|----------------------|-----------------------|------------|----------------|------------|----------------------|----------------|-----------------------|----------------|------------|-------------|-----------|----------|
| ROI | T-Test (Girls v Boys) | | | | Equivalence Test | | | | Variance | | | |
| | t(102) | p | Girls' mean | Boys' mean | t ₁ (102) | p ₁ | t ₂ (102) | p ₂ | F(1,102) | p | Girls' sd | Boys' sd |
| LIPS | 1.08 | 0.28 | 0.080 | 0.072 | 4.46 | 0.00001* | -2.33 | 0.01* | 1.85 | 0.18 | 0.041 | 0.032 |
| RIPS | 0.84 | 0.4 | 0.085 | 0.078 | 4.22 | 0.00003* | -2.56 | 0.0059* | 1.09 | 0.30 | 0.050 | 0.040 |
| LIFG | -0.44 | 0.66 | 0.044 | 0.047 | 3.82 | 0.0001* | -2.94 | 0.002* | 1.28 | 0.26 | 0.033 | 0.040 |
| RIFG | 1.04 | 0.3 | 0.042 | 0.036 | 4.43 | 0.00001* | -2.34 | 0.01* | 0.42 | 0.52 | 0.029 | 0.027 |
| ACC | 0.84 | 0.4 | 0.046 | 0.041 | 4.22 | 0.00003* | -2.55 | 0.006* | 0.001 | 0.98 | 0.029 | 0.030 |
| Regression Analyses | | | | | | | | | | | | |
| ROI | F(3,93) | p | R ² | Gender | | | Math Ability (TEMA-3) | | | Interaction | | |
| | | | | Beta | t(93) | p | Beta | t(93) | p | Beta | t(93) | p |
| LIPS | 8.54 | 0.00005* | 0.22 | 0.005 | 0.35 | 0.73 | 0.001 | 4.32 | 0.00004* | -0.0005 | -1.42 | 0.16 |
| RIPS | 12.54 | < 0.00001* | 0.29 | 0.0002 | 0.01 | 0.99 | 0.0013 | 4.94 | < 0.00001* | -0.0003 | -0.94 | 0.35 |
| LIFG | 2.47 | 0.066 | 0.07 | 0.01 | 0.69 | 0.49 | 0.0006 | 2.37 | 0.020* | -0.0003 | -0.69 | 0.49 |
| RIFG | 2.81 | 0.044* | 0.08 | 0.002 | 0.14 | 0.89 | 0.0004 | 2.44 | 0.016* | -0.0002 | -0.72 | 0.47 |
| ACC | 2.93 | 0.038* | 0.09 | 0.008 | 0.66 | 0.51 | 0.0005 | 2.73 | 0.008* | -0.0004 | -1.35 | 0.18 |